

## BIRDS OF BEDOUT ISLAND—A VISIT IN MAY 1975

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### INTRODUCTION

In May 1975 I chartered a 12 m boat from Port Hedland to observe the effects of Cyclone "Trixie", of February 17-24, 1975, on the birdlife of Bedout and North Turtle Islands. On February 18 the eye of the cyclone had passed by the eastern side of Bedout I. and winds estimated between 130-185 km per hour blew over the two islands (Bureau of Meteorology). An earlier visit, three years previously, by T. E. Bush and G. A. Lodge provided the stimulus for the trip and a basis for comparison of the breeding regime between the two seasons.

### BEDOUT ISLAND

Notes on my observations on May 11 follow:

**Brown Gannet, *Sula leucogaster*.** There were about 1,000 nesting pairs scattered all over the island, excepting the southern end, nesting on the beaches above high water mark and amongst the clumps of *Spinifex longifolius*. The nests varied considerably, eggs being laid either on the bare ground or in substantial structures of *Spinifex* stems, feathers, seaweed and odd pieces of sea shell. The constructed nests were much larger than those of the Masked Gannet, average measurements being about 45 cm across and about 4 cm deep. Most contained two eggs, the remainder one. One large chick was found on the island, covered in white down. Several dead adults were found among the *Spinifex* clumps.

Egg measurements of six selected clutches: A, 60.9 x 41.9 mm; 59.4 x 41.8. B, 60.9 x 42.0; 53.7 x 39.1. C, 61.5 x 42.7; 65.1 x 44.5. D, 53.3 x 39.8; 55.8 x 41.7. E, 59.6 x 41.6; 61.4 x 42.8. F, 59.9 x 38.3; 62.7 x 41.2. Average, 59.5 x 41.5 mm.

**Masked Gannet, *Sula dactylatra*.** About 270 nesting pairs were found in three separate groups. The greater number of nests were shallow scrapes, the eggs being laid on bare ground. Odd nests had loose linings of short pieces of *Spinifex longifolius*, feathers and small sea shells. Most contained two eggs, occasional ones had one egg, and one nest was found with three eggs. No young were seen. Nest sizes averaged about 30 cm across and were about 4 cm deep. Odd pairs of Brown Gannets nested among the Masked Gannets in all three groups.

In Group 1 about 90 pairs nested on a patch of bare ground surrounded by *Spinifex* on the south side near the base of the lighthouse. Group 2 comprised about 150 nesting pairs in a similar situation north-west of the lighthouse. Group 3 consisted of about 30 pairs on the northern end of the island, their nests being between high water mark and the edge of the *Spinifex*.

Egg measurements of seven selected clutches: A, 64.0 x 56.5 mm; 67.9 x 57.4. B, 68.4 x 39.5; 66.4 x 41.1. C, 66.0 x 46.1; 64.7 x 45.6. D, 63.0 x 44.0; 62.1 x 43.0. E, 59.1 x 47.4; 62.1 x 46.0. F, 66.3 x 44.5; 62.2 x 43.8. G (a 3-egg clutch), 55.9 x 41.8; 60.2 x 44.3; 60.0 x 42.0. Average, 63.2 x 45.5 mm.

**Lesser Frigate-bird, *Fregata ariel*.** About 900 nesting pairs were scattered practically all over the island, excepting at the northern end. The biggest nesting concentration was on the west side of the island. The birds nested in various size groups, from lone pairs to an aggregation of about one hundred, each individual just out of pecking range of its neighbours. About ten nesting pairs were the most frequent group. Both sexes were seen incubating at the same time in most groups, but others varied from all male to all female incubating birds.

The nests were built on the top of clumps of *Spinifex*; none were on the ground. They were shallow and saucer-shaped, constructed entirely of *Spinifex*. They averaged 25-30 cm across by 4 cm in depth. Incubation

stages varied from fresh eggs to newly hatched young. Only five young had hatched whilst we were on the island and no large fledglings were seen. Several dead adults were noticed.

Egg measurements of six selected clutches: A, 71.2 x 42.6 mm. B, 66.9 x 44.3. C, 58.5 x 39.6. D, 62.3 x 45.4. E, 60.5 x 43.0. F, 67.7 x 42.5. Average, 64.5 x 42.9 mm.

**Crested Tern, *Sterna bergii*.** About 200 nesting pairs were found in two separate groups—the larger, of 150 pairs, were at the southern end of the island, and the second, of about 50 pairs, at the northern end. The birds were on eggs; no chicks were found, but about 30 large fledglings were sighted in a group near the beach at the southern tip of the island.

**Lesser Crested Tern, *Sterna bengalensis*.** Several individuals were resting on the beach with a small party of Crested Terns. Two pairs were nesting—one pair in each of the Crested Tern colonies. The egg measurements in the two clutches were: A, 54.5 x 37.2 mm. B, 53.4 x 34.9 mm. Average, 53.9 x 36.1 mm.

**Nankeen Kestrel, *Falco cenchroides*.** One bird found dead. Rigor mortis had not set in when the body was discovered. There was no obvious cause of death, but the bird may have died of starvation as no mice or large insects were noticed on the island.

**Sooty Storm-Petrel, *Oceanodroma matsudeirae*.** Five individuals were seen flying close to the surface of the sea, sighted from our boat on May 12 between Bedout I. and North Turtle I. The birds were entirely blackish-brown with deeply forked tails.

## DISCUSSION

Tunney between May 19 and 30, 1901 recorded eggs of the following species: Brown Gannet, Masked Gannet, Lesser Frigate-bird, Crested Tern and Sooty Tern. In addition he collected specimens of the Common Noddy on the nest, now in the Western Australian Museum (Serventy, 1952). Tunney did not record seeing any young but an accompanying photograph shows downy young of both Brown and Masked Gannets. Assuming that the photograph was taken on the date of Tunney's visit, and estimating the chicks' age at 4-5 weeks, this would indicate that egg-laying had commenced in early February.

Bush and Lodge (1977) on May 14-15, 1972 recorded breeding of Brown Gannet, Masked Gannet, Lesser Frigate-bird, Crested Tern and Lesser Crested Tern, ranging from nest construction to fledged young (Table 1). Some Brown Gannet young were large and fully feathered (Bush, pers. comm.), and egg-laying of this species probably continued throughout the summer months of that season. Serventy's visit on October 19, 1949 found Brown and Masked Gannets on eggs, with a few newly-hatched chicks of the former.

These records indicate that egg-laying in both species of Gannets on Bedout I. has two peaks, in the autumn and the spring.

TABLE 1.—NUMBER OF BREEDING PAIRS AND STAGES OF NESTING IN A NORMAL YEAR, 1972 (DATA FROM BUSH AND LODGE)

	Breeding Pairs	Nests Under Construction	Eggs	Small Young	Large Fledglings
Masked Gannet	400	*	*	*	*
Brown Gannet	5,000	*	*	*	*
Lesser Frigate-bird	2,000	*	*	*	*
Crested Tern	300	nil	*	*	nil
Lesser Crested Tern	Several	nil	*	nil	*

\* means present

TABLE 2.—NUMBER OF BREEDING PAIRS AND STAGES OF NESTING IN THE YEAR OF CYCLONE "TRIXIE", 1975

	Breeding Pairs	Nests Under Construction	Eggs	Small Young	Large Fledglings
Masked Gannet	270	nil	*	nil	nil
Brown Gannet	1,000	nil	*	nil	(1)*
Lesser Frigate-bird	900	nil	*	(5)*	nil
Crested Tern	200	nil	*	nil	*
Lesser Crested Tern	2	nil	*	nil	nil

\* means present

Comparing Tables 1 and 2 it can be seen that Cyclone "Trixie" had a marked effect on breeding birds and stages of nesting on Bedout I. On my visit all breeding birds were at a similar stage of nesting. Because only five Lesser Frigate-birds/chicks were hatching I believe that the birds re-constructed nests and re-layed after the cyclone had completely destroyed their first attempt. No evidence of added eggs or dead chicks was found, however, and any such not blown into the sea would have been removed by predators. Evidence that breeding *had* occurred before Cyclone "Trixie" is indicated by the presence of a large Brown Gannet chick and a group of Crested Tern fledglings. These young birds may have been among the few survivors of the cyclone by sheltering amongst the clumps of *Spinifex*.

Serventy and Whittell (1976) give the incubation period of the Lesser Frigate-bird as 41 days; chicks were hatching during my visit. A freshly broken Brown Gannet egg had a fully developed embryo not far from hatching. As the incubation period of this species is 43-47 days (Serventy *et al.*, 1971) I believe that egg-laying re-commenced approximately five weeks after the passing of Cyclone "Trixie".

Although the cyclone must have destroyed much bird-life and did disrupt the normal breeding season of these birds it is evident that breeding colonies will re-establish, but on a smaller scale. Provided such cyclones did not occur too frequently over the same area numbers would build up again.

#### NORTH TURTLE ISLAND

Notes on a visit on May 12:

**Pied Cormorant, *Phalacrocorax varius*.** A colony of approximately 1,500 nesting pairs were on the south-western end of the island. The nests were built on the ground about 60 cm apart; bowl-shaped, built of sticks and twigs, and lined sparsely with *Spinifex* stems, sea-weed and, occasionally, with odd feathers. All the nests contained eggs; clutches of three eggs were most common, followed by clutches of four; those with one and two eggs were least frequent. As these last-mentioned were clean, had no scratch marks, nor were polished from incubating birds, they could have been incomplete clutches. One nest contained five eggs. One dead adult was found in the colony.

**Australian Pelican, *Pelecanus conspicillatus*.** Three separate nesting colonies were found on the island, two active and one abandoned. The greater number of nests were shallow scrapes, lined sparsely with large pieces of *Spinifex longijolius*, feathers and grasses. A small number lacked any lining and the eggs were laid on the bare ground. The first group of nests was on the south-western end of the island, about 100 m from the shore in a patch of open ground. It consisted of about 200 nesting pairs sitting on eggs; two-egg clutches predominated with an occasional clutch of three. In some nests the eggs had started chipping. The second group, about 300 m to the north-west, comprised 40 nesting pairs. Seven nests contained two eggs, 24 nests had one egg, and nine nests were ready for laying. One clutch of two eggs was collected, measurements

being 93.1 x 55.4 mm and 96.1 x 51.4 mm, and incubation had barely started. The third group, the abandoned one, was on the north-eastern end of the island. It covered an area of about half a hectare and contained a large number of addled eggs and dead young, varying from recently hatched nestlings to larger, feathered young about five weeks old. Most of the eggs and dead young were blown against clumps of *Spinifex* and small bushes, undoubtedly by the strong winds of Cyclone "Trixie". It would appear that after the cyclone the birds re-nested as the two groups just mentioned, but in lesser strength. No dead adults were found on the island.

**Lesser Frigate-bird, *Fregata ariel*.** One lone bird was flying over the water at the southern end of the island.

**Caspian Tern, *Hydroprogne caspia*.** Ten birds were flying together along the shore. No nesting was taking place, though an abandoned egg, partly buried in the sand, was found just above high water mark. It was collected and found to be fresh.

**Eastern Curlew, *Numenius madagascariensis*.** Two birds were feeding on the tidal flats.

**White-breasted Sea-Eagle, *Haliaeetus leucogaster*.** A pair was soaring over the island. A nest, not in use, was found on the eastern side. The normal nesting period, at North-West Cape, is between June and August (Serventy and Whittell, 1976).

**Mangrove Kingfisher, *Halcyon chloris*.** One pair were seen perched on a discarded 44-gallon drum partly buried in the sand.

**Australian Pipit, *Anthus novaeseelandiae*.** Two pairs were seen amongst short vegetation.

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#### NOTES ON KIMBERLEY BIRDS

By W. H. BUTLER, Wanneroo

In winter and spring 1975 I spent three months in the Kimberley Division collecting and observing birds for Dr. G. M. Storr (Western Australian Museum) who is preparing a checklist of the birds of the Kimberleys. My field work was financed by an Australian Biological Resources Study grant to Dr. Storr who directed the field activities.

The first half of the work was carried out in the far south-east of the Division, especially in the arid Gardiner and Denison Ranges, respectively at Granny Soak (19° 07' S, 128° 53' E) and Palm Spring